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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/577,007  | 05/24/2000  | Kazuyoshi Fujioka    | 829-551             | 5218             |
| 23117   | 7590        | 03/11/2004           | EXAMINER            |                  |
| NIXON & VANDERHYE, PC<br>1100 N GLEBE ROAD<br>8TH FLOOR<br>ARLINGTON, VA 22201-4714 |             |                      | SCHECHTER, ANDREW M |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2871                |                  |

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                       |           |
|------------------------------|--------------------------------------|---------------------------------------|-----------|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/577,007 | <b>Applicant(s)</b><br>FUJIOKA ET AL. |           |
|                              | <b>Examiner</b><br>Andrew Schechter  | <b>Art Unit</b><br>2871               | <i>AW</i> |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.  
2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-15 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 1-6, 8, 9 and 11-15 is/are allowed.  
6) ☒ Claim(s) 10 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 8 December 2003 have been fully considered but they are not persuasive.

Regarding claim 10, the applicants argue [p. 12] that “any possible combination of *Kikuchi* and *Ochi*” would result in a device differing from the claimed invention. This is not persuasive. The rejection below describes a logical combination of *Kikuchi* and *Ochi* (with *Mitsui*) which reads on the claimed invention.

The applicants further argue [p. 13] that *Kikuchi* teaches directly away from the claim invention by requiring a pattern on both substrates proximate the LC pour hole in order to prevent uneven distribution of ionic impurities in the LC. This is not persuasive. First, *Kikuchi*'s pattern is not only proximate the LC pour hole, but also extends “along the entire length of one side of the display pixel area” as amended by the applicants. Second, the applicants' use of “requiring” is inappropriate, since *Kikuchi* merely discloses a pattern on both substrates. There is no explicit statement in the record from the *Kikuchi* reference (or any other prior art) which explicitly condemns having the pattern on only one substrate, to oppose *Ochi*'s teaching that doing so is beneficial. The totality of the record therefore supports the combination applied to claim 10 below.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Mitsui et al.*, U.S. Patent No. 5,408,345 in view of *Kikuchi et al.*, Japanese Patent Document 5-323336 and further in view of *Ochi*, Japanese Patent Document No. 11-038389.

*Mitsui* discloses [see Figs. 4-6, for example] a liquid crystal display device comprising a pair of substrates [31, 45], a liquid crystal layer [49], switching elements [40], gate and source lines [32, 39], interlayer film [42], and pixel electrodes [38] over the gate/source lines via the interlayer insulating film. *Mitsui* does not disclose an electrode pattern for adsorbing an ionic impurity on the interlayer insulating film in the surrounding region.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide such an electrode pattern on the interlayer insulating film in the surrounding region, as taught by *Kikuchi*. *Kikuchi* teaches and motivates [see abstract and Figs. 1, 2, 9 for example] forming an electrode pattern in the surrounding (non-display) region, which when supplied with a voltage acts to trap ionic impurities; this accomplishes the desirable goal of preventing an uneven display. The electrode pattern is only along the entire length of one side of the display area, on the side recited

by claim 10 [between the head of the first and second arrows giving the rubbing direction, see discussion in Paper No. 10, pp. 2-3].

The claim was previously amended to add the limitation that the electrode pattern is “on only one of the substrates” to distinguish it from the combination of *Mitsui* in view of *Kikuchi*, since *Kikuchi* discloses putting the electrode pattern for adsorbing an ionic impurity on both substrates. However, in view of the new reference *Ochi*, it would have been obvious to put the electrode pattern in *Mitsui* in view of *Kikuchi* on only one of the substrates.

Whereas *Kikuchi* discloses its invention in the context of a passive matrix display (without pixel electrodes and switching elements), *Ochi* discloses an electrode pattern for adsorbing ionic impurities in the context of an active matrix LCD panel. (As a side note, *Ochi* discloses the pixel electrodes on an interlayer insulating film, which extends into the surrounding region of the display, and forms the electrode pattern coplanar with the pixel electrode, all of which would be obvious in the active matrix device of *Mitsui* in view of *Kikuchi*, motivated by the evident efficiency of manufacturing process of doing so and by the example of *Ochi*.)

With regard to the “on only one of the substrates” limitation, *Ochi* discloses that the common electrode [5] is made to extend in the second substrate [17] to be opposite the electrode pattern [24] [see paragraph 0021, for example]. Given *Mitsui*’s disclosure that its common electrode is already formed “nearly over the entire surface ... on the other substrate” [claim 1], it would have been obvious to one of ordinary skill in the art at the time of the invention to use this common electrode to oppose the electrode pattern,

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motivated by the desire to eliminate the trouble (and complication of the manufacturing process) of patterning a separate electrode pattern for the second substrate, as *Kikuchi* does. [The difference between active and passive matrix displays is crucial here, since the active matrix display of *Mitsui* has a single common electrode on the second substrate, as opposed to the many (individually-driven) electrodes in a passive-type display; *Ochi*'s example shows that this single common electrode can have a dual function, opposing both the electrode pattern and the pixel electrodes.] Claim 10 is therefore unpatentable.

***Allowable Subject Matter***

4. Claims 1-6, 8, 9, and 11-15 are allowed.
5. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose the device of claims 1 or 15. In particular, the prior art *Ochi* discloses using "another system with other supply voltage" [paragraph 0024] to provide the DC voltage to the electrode pattern, rather than providing an electrical signal from at least one of a power supply for a source driving circuit and a power supply for a gate driving circuit, as recited in the previous claim 7. Claims 1 and 15 are therefore allowed, as are claims 2-6, 11, and 14 which depend from claim 1.

Claims 9, 12, and 13 recite the electrode pattern for adsorbing an ionic impurity being only along 2 or 3 particular sides of the display, which is not disclosed by the prior art (*Tanaka* and *Ochi* disclose the electrode pattern on all four sides, *Kikuchi* discloses it

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only on one side, that recited by the present claim 10). Claims 9, 12, and 13 are therefore allowed.

Claim 8 recites an electrode pattern for adsorbing an ionic impurity provided over the insulating film divided into a plurality of segments all on the same substrate, which is not disclosed by the prior art, so it is allowed.

### ***Conclusion***


6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

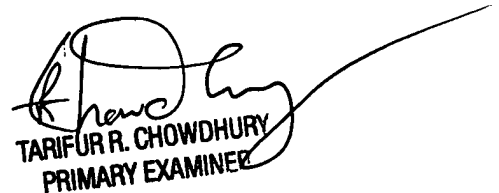
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (571) 272-2302. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Andrew Schechter  
23 February 2004

  
TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER